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ABSTRACT

This United States Department of Agriculture summary report focuses on the revenues, costs, and finances of specialized cotton farms in 1986. The report also provides general information on all farms producing cotton. The data on which the report is based are from the 1986 Farm Costs and Returns Survey. Some of the conclusions drawn from the study are the following: (1) specialized commercial cotton farms--those with at least 50 percent of the value of their production from cotton and with at least $40,000 in total production--had relatively high net returns compared with other specialized field crop farms in 1986; (2) specialized cotton farms experienced more financial stress than most other types of farms; (3) low yields, yield quality problems in several areas, and low cotton prices were partly to blame for this financial stress; (4) large farms with sales of $250,000 or more had the most favorable returns and cost structures; (5) U.S. cotton production is concentrated in three areas that account for more than 90 percent of total production--the Delta, the Southern Plains, and the West; and (6) specialized cotton farms in the Southern Plains had the lowest returns and the highest incidence of financial stress among the major cotton regions. (KC)

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Financial Performance of Specialized Cotton Farms

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Specialized commercial cotton farms--those with at least 50 percent of the value of their production from cotton and with at least $40,000 in total production--had relatively high net returns compared with other specialized field crop farms in 1986. But, specialized cotton farms experienced more financial stress than most other types of farms. Low yields, yield quality problems in several areas, and low cotton prices were partly to blame. Large farms with sales of $250,000 or more had the most favorable returns and cost structures. U.S. cotton production is concentrated in three areas which account for over 90 percent of total production: the Delta, the Southern Plains, and the West. Specialized cotton farms in the Southern Plains had the lowest returns and the highest incidence of financial stress among the major cotton regions.

U.S. cotton sales in 1986 amounted to $2.9 billion, the lowest since 1975. Only 15,300 farms had 50 percent or more of their value of production in cotton in 1986. About 9,285 cotton farms in this category also had at least $40,000 in total agricultural production. This report focuses on the revenues, costs, and finances of these specialized cotton farms in 1986. This report also provides general information on all farms producing cotton. The data on which this report is based are from the 1986 Farm Costs and Returns Survey.

The economic environment for cotton has been constantly changing as U.S. and world farmers and traders adjust to the market-oriented policies of the Food Security Act of 1985. Before its passage, the cotton loan rate served as the U.S. cotton price floor and, in effect, the price floor for world cotton. The loan rate was high in relation to the cotton price of other major cotton-producing countries, reducing potential U.S. cotton exports. The 1985 Act eliminated the role of the loan rate as the price floor, and U.S. cotton exports have grown since its implementation. For example, the U.S. share of global cotton trade grew from 10 percent in 1985/86 to 26 percent in 1986/87. A second significant provision of the 1985 Act affecting cotton producers in 1986 was the establishment of the loan repayment program. Under this program, cotton producers could generally repay their CCC loan at 80 percent of the loan rate in 1986, because the world market price was below the loan rate that year. Thus, the act stimulated exports with competitive pricing while protecting producer returns in 1986.

Specialized commercial cotton farms are most affected by Government cotton policies because they sell the bulk of U.S. cotton and generally rely on farm income for a substantial portion of their household's total income. They produced about 72 percent of total U.S. cotton, and cotton production amounted to about 75 percent of their total production in 1986. The other 6,000 farms which specialized in cotton but had total production of less than $40,000 in 1986 accounted for less than 5 percent of U.S. cotton production. The remaining 23 percent was produced by farms which specialized in other commodities and for which cotton did not account for more than half the value of production on the farm.

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GROSS REVENUES AND NET RETURNS

The principal shortrun measure of financial health is net returns which, for all specialized cotton farms, averaged $29,791 in 1986. More than 30 percent of the specialized cotton farms had negative net returns. Off-farm income was the major portion of farm operator household cash income for 40 percent of the specialized cotton farms in 1986. The average off-farm income was $14,701.

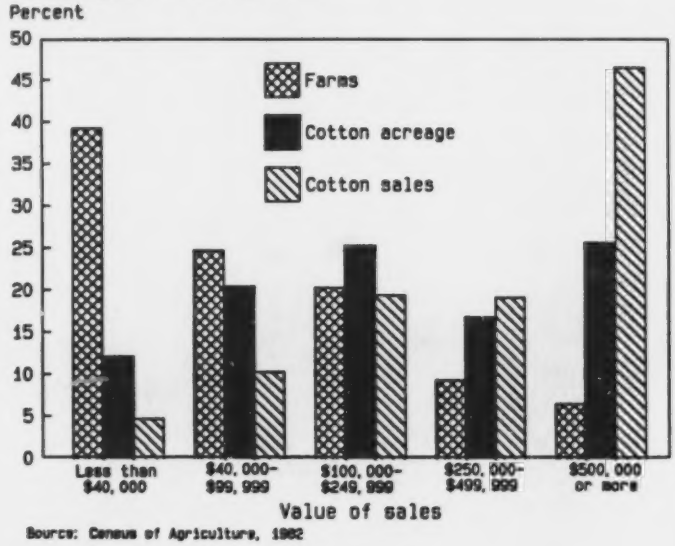
What Have We Learned from the Most Recent Censuses of Agriculture?

The latest Census of Agriculture reported that over 38,000 farms sold cotton in 1982. About 55 percent of these farms had 50 percent or more of their sales in cotton, the highest rate of specialization for all field crops or cash grains, except tobacco.

Cotton production is also more concentrated on large farms than is production of many other field crops or cash grains. About 40 percent of the farms which sold cotton in 1982 had less than $40,000 in total sales, but they accounted for less than 5 percent of cotton sales and about 12 percent of harvested cotton acreage (see figure at right). Farms with cotton sales of $250,000 or more accounted for 15 percent of all cotton-producing farms, but they produced about 65 percent of U.S. cotton on about 40 percent of cotton acreage.

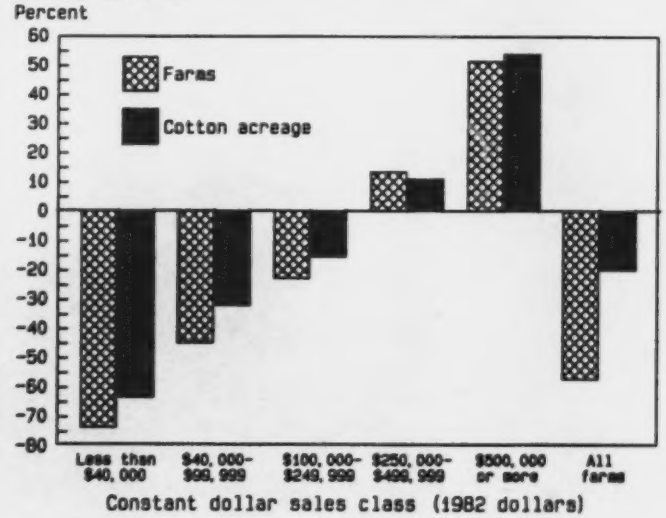
The trend towards increasing concentration of cotton production on large farms is not new. For example, the number of farms producing cotton and their cotton acreage increased for farms with $250,000 or more in sales (in 1982 dollars) between 1974 and 1982. During this same period, the number of cotton farms and the amount of cotton acreage fell both as a whole and in all classes except the largest (see figure at right).

Almost half of the cotton sales came from the largest farms in 1982



Source: Census of Agriculture, 1982

Cotton acreage shifted to larger farms during 1974-82

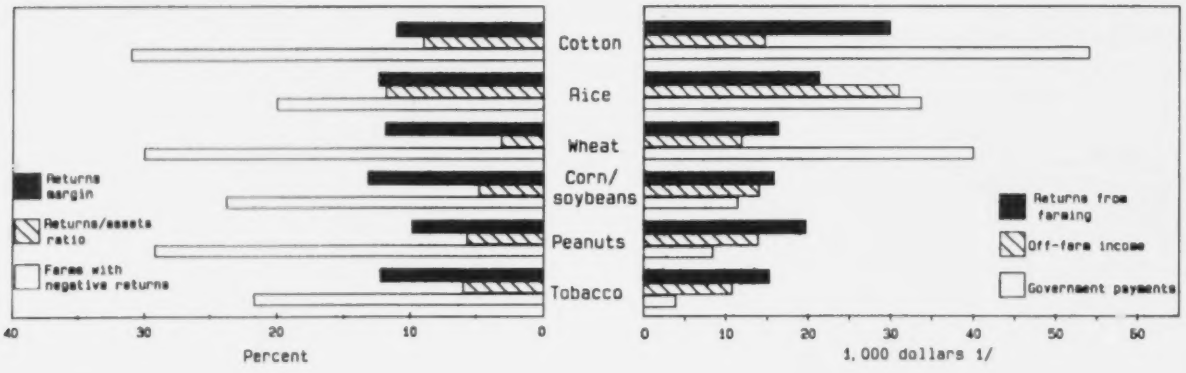


Source: Census of Agriculture

Specialized cotton farms fared well compared with other specialized major field crop farms in 1986 (fig. 1). Specialized cotton farms had the highest returns/assets ratio--9 percent--compared with farms specializing in five other major field crops: rice, wheat, corn and soybeans, peanuts, and tobacco. The returns margin for specialized cotton farms--11 percent--and the percentage with negative returns were neither the highest nor lowest among the specialized groups. Average direct Government payments of $54,086 per farm and net returns of $29,791 were the highest of any type of specialized crop farm. Off-farm income for specialized cotton farms was also above average at $14,701.

Farm returns varied significantly by farm size. Average gross revenue ranged from about $108,000 to $648,000 across the three size classes (table 1). The share of gross revenue from different sources was similar across sizes, but some differences were evident. The percentage of gross revenue from crops other than cotton increased from 11 percent for the smallest size class to 21 percent for the largest. Government payments decreased as a proportion of gross revenues as size class increased, possibly because of payment limits.

Figure 1
The returns of specialized cotton farms compared favorably with other specialized field crop farms in 1986



1/ Average per farm.
Source: 1986 Farm Costs and Returns Survey.

Table 1--Average net returns, gross revenue, and components of gross revenue for specialized cotton farms by size class, 1986

Size class	Average net returns	Average gross revenue 1/	Average share of gross revenue per farm: Cotton	Other crops	Livestock sales	Government payments	Other farm-related income
	Dollars		Percent				
$40,000-$99,999	1,547	108,359	55	11	2	26	6
$100,000-$249,999	8,993	206,979	58	15	2	21	5
Over $250,000	112,249	648,081	57	21	1	18	3
All	29,791	271,005	56	18	2	20	4

Note: Data may not add due to rounding.
1/ Includes off-farm income.
Source: 1986 Farm Costs and Returns Survey.

General Terms and Returns Definitions

Commercial farms produce $40,000 or more in agricultural commodities in 1 year.

Specialized cotton farms are commercial farms whose value of cotton production accounts for 50 percent or more of the value of the farm's total crop production plus livestock commodity sales.

Net returns equals gross revenue less total expenses (or costs) for the farm business. This measure does not include farm operator household income and expenses or expenditures for capital items and depreciation. Thus, net returns equals residual returns to owned inputs and own labor and management before capital replacement.

Gross revenue equals the sum of livestock commodity sales, the value of crop production (less that fed to livestock), direct Government payments, income from rental of farmland, the rental value of hired laborers' dwellings, and other cash farm-related income.

Value of cotton production is equal to the quantity of cotton produced less that used on the farm times a constructed price for cotton. The constructed price, on a per pound basis, equals the U.S. average market price for Upland cotton (51.5¢) plus the difference between the CCC loan rate (55¢) and the loan repayment rate (44¢) for 1986. Cotton loan deficiency payments were not limited in 1986. Thus, this constructed price more accurately reflects returns per pound to the producer than the actual market price. Upland cotton accounts for about 98 percent of U.S. cotton production.

Total expenses are all cash variable and fixed business expenses, except for capital consumption, but including share rental expenses, inkind payments to hired workers, and purchased livestock.

Capital expenditures are for purchases of farm machinery, office machines, and construction costs.

Returns margin equals net returns divided by gross revenue. This measure provides an indicator of how effectively gross revenues are converted to net returns.

Returns/assets ratio equals the sum of net returns and interest expenses divided by the value of assets. This measure of performance represents the returns to assets, labor, and management before capital replacement.

Size classes are based on the sum of the value of crop production (less that fed to livestock) and gross sales of livestock commodities. The categories are set at:

$40,000 to $99,999 (small commercial farms),
$100,000 to $249,999 (midsized commercial farms), and
$250,000 or more (the largest farms).

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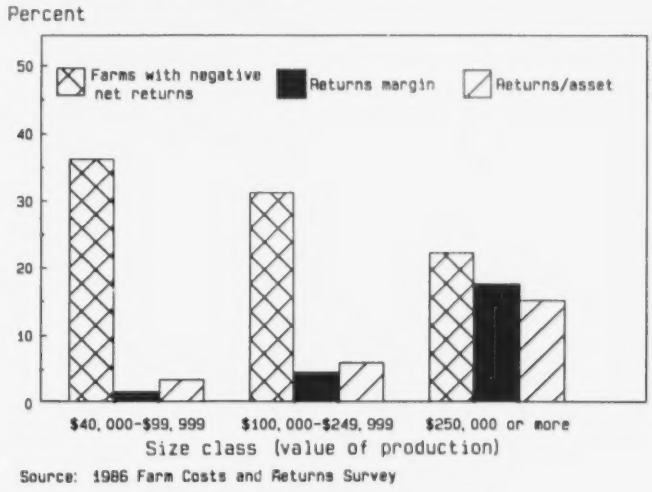
The largest farms, with average net returns of $112,249, were in the best financial shape in 1986. That size class had the highest returns margin and returns/assets ratio and the lowest percentage of farms with negative net returns (fig. 2). Although 23 percent of the specialized cotton farms were large, these farms were only 16 percent of those with negative net returns.

Figure 2

The larger the cotton farm, the more favorable were the returns in 1986



Source: 1986 Farm Costs and Returns Survey

Small specialized cotton farms had low returns in 1986. More than 30 percent of the small farms had negative net returns, although the average net returns for small specialized cotton farms was $1,547. Midsized farms had average net returns of almost $9,000 in 1986. Their performance measures (returns margin and returns/assets ratio) were somewhat better than the small farms, but significantly below the largest farms.

Most U.S. farm operator households receive some of their income from off-farm sources. As farm size increases, average off-farm income generally decreases. Households associated with the largest farms, however, are an exception and generally earn more off their farm than do midsized farms. Specialized cotton farms also followed that pattern in 1986. The smallest farms had $15,146 in off-farm cash income in 1986. Average off-farm income was $13,671 for the midsized farms and $15,784 for the largest farms.

COST STRUCTURE OF SPECIALIZED COTTON FARMS

Total production expenses for the whole U.S. agricultural sector in 1986 dropped 9 percent from 1985. Production expenses also declined during 1984 and 1985, but the 1986 drop was the largest annual percentage drop in total production expenses since 1932. Expenses for most major production inputs declined in 1986 because of declining prices for some inputs and lower input use, as acreage reduction programs were implemented and as farmers reduced the quantity of some inputs used per acre. As cotton prices declined again in 1986, lower production expenses provided farmers a way to increase their chances to stay in operation.

One way to examine farm cost structure is to calculate a cost/returns ratio; that is, a ratio of input costs to the total value of production (table 2). In 1986, the overall cost/returns ratio for specialized cotton farms, excluding capital expenditures, was 99 percent; that is, 99 cents for every dollar of production. When capital expenditures and estimates for unpaid labor are included, the ratio was 113 percent. However, cotton farms received record payments from Government programs in 1986. When these payments are included with the value of production, the ratio is 89 percent. Cost/returns ratios of farms will differ with enterprise mix, production practices, and efficiency levels. Because cost/returns ratios are in terms of the total value of production of all products of the farms, they should not be interpreted as costs per bale of cotton.

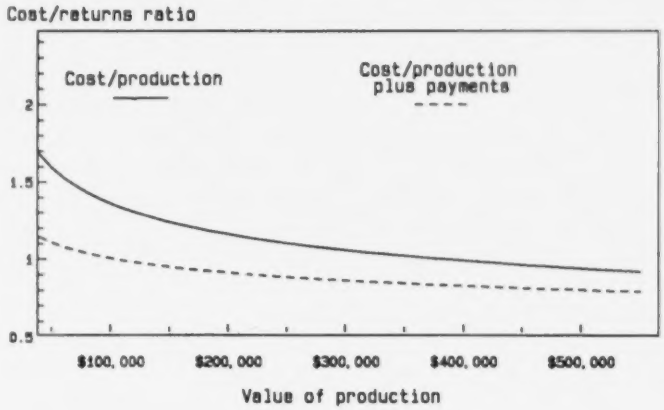
As is the case with other types of farms, the cost structure of specialized cotton farms varies by farm size. The cost/returns ratio declines as the size of cotton farms increases (fig. 3).

This trend is an indicator, although not an exact measure, of "economies of size"--that is, unit production costs decline as farms get larger. Only the largest of the three commercial farm sizes defined here had cost/returns ratios below 100 percent in 1986 unless direct Government payments are included with the value of total commodity production in returns.

The small specialized cotton farms had the highest cost/returns ratio for many inputs: seed, livestock inputs, fuel and supplies, marketing, interest, capital, maintenance and repair, and taxes and other overhead expenses. Their higher livestock expenses reflected their greater participation in livestock production. They also spent

Figure 3

Small specialized cotton farms had the highest cost/returns ratio in 1986 1/



1/ Costs include an estimate for unpaid labor and capital expenditures

Source: 1986 Farm Costs and Returns Survey

Table 2--Average ratios of costs to value of production for specialized cotton farms by size class, 1985

Cost components	Value of total production			
	$40,000 to $99,999	$100,000 to $249,999	$250,000 or more	All farms
	Cents per dollar of production			
Variable crop inputs	29	33	28	30
Fertilizer	9	12	8	9
Chemicals	12	13	12	12
Seed	5	4	3	4
Irrigation	3	3	5	4
Variable livestock inputs	3	1	1/	1
Fuel and supplies	14	9	6	8
Labor:				
Excluding unpaid labor	17	19	23	21
Including estimated value of unpaid labor 2/	34	28	26	28
Marketing	6	5	3	4
Interest	17	12	10	11
Capital-related expenditures (purchases, leasing, fuel, repairs)	27	19	13	17
Rent	17	22	14	17
Taxes and other business costs	10	6	6	6
All costs, excluding capital expenditures	115	106	92	99
All costs, including capital expenditures:				
Excluding unpaid labor	129	115	96	106
Including estimated value of unpaid labor 2/	145	124	99	113
All costs to production plus payments 3/	105	98	81	89

1/ Less than 1 cent per dollar of production.
2/ Based on the average wage rate for farm laborers.
3/ All costs, including capital expenditures and including unpaid labor estimate, to value of production plus direct Government payments.
Source: 1986 Farm Costs and Returns Survey.

the least on leasing and irrigation in relation to their production. The paid labor cost/returns ratio for small specialized cotton farms was 17 percent. However, those farms relied on a large amount of unpaid labor hours. When the value of those unpaid labor hours is estimated (based on the average labor wage rate in the State for hired farm workers) and added to paid labor expenses, the cost/returns ratio for labor doubles to 34 percent.

Midsized specialized cotton farms generally had cost/returns ratios for production inputs which fell between those for the small and large specialized cotton farms. Their cost/returns ratios for fertilizer, chemicals, and rent were higher than those of the other size groups, however. Midsized farms had a lower cost/returns ratio for paid labor than the largest farms. But, when the estimated value of unpaid labor is included, the midsized farms had a larger labor ratio.

Large specialized cotton farms had the lowest cost/returns ratio overall and for all individual production inputs, except for leasing, irrigation, and paid labor.

FINANCIAL STRENGTH AND STRESS AMONG COTTON FARMERS

Declining commodity prices and increasing farm expenses in the early and mid-1980's have resulted in high levels of financial stress for many commercial farmers. This analysis of the financial condition of operators is based on the severity of the debt burden and on whether available cash-flow could support full, partial, or no payment of debt service obligations. (See "What Is Financial Stress?" below.)

What Is Financial Stress?

We considered farmers to be financially stressed if their debt burden and debt service met one of the following conditions: they were technically insolvent and obviously in danger of financial failure; they had very high debts and could not fully service their interest and principal payments; or they had high debts and could not service any of their debt payment obligations.

Debt/asset ratio is the ratio of debt to assets. It is categorized as no debt (0 percent), low debt (0–40 percent), high debt (40–70 percent), very high debt (70–100 percent), and technically insolvent (more than 100 percent).

Debt service is the ability of farmers to meet their cash-flow requirements, including interest, principal payments, and family living expenses. It equals cash-flow plus interest expenses divided by interest expenses plus estimated principal payments due on outstanding loans.

Net cash-flow before debt service is gross cash farm income plus off-farm income less cash farm expenses, capital expenditures, and a family living allowance.

Interest/sales ratio is measured as total interest expenses divided by total commodity sales. This measure is similar to the debt/asset ratio in that it provides an indication of the debt burden of an operation while controlling the comparison for size. It also indicates the ability of operators to cover their interest expenses from the current year's sales.

Almost 2,400 specialized cotton farms, 26 percent of all such farms, were financially stressed as of January 1, 1987 (table 3). These cotton farms held 45 percent of the debt of all specialized cotton farms. Over 1,300 cotton operations were technically insolvent, with debts exceeding assets, in early 1987.

The financial stress level was higher than in almost all other major enterprises, but there were several indications of financial strength among specialized cotton farms:

- Fifty-seven percent of specialized cotton producers were able to fully service their principal and interest obligations from earnings during 1986.
- The debt/asset ratio of the 6,900 financially strong cotton producers was only 25 percent.
- About 2,500 cotton farms were unable to service any debt obligations from earnings in 1986, but nearly half of these were classified as nonstressed because of their strong debt position (debt/assets ratio of less than 40 percent).

The share of cotton farms with debts exceeding assets (technically insolvent) increased from 10 percent in 1985 to 14 percent in 1986. Unfavorable weather conditions in the South and land value decreases of 10–27 percent in Arkansas, Louisiana, Mississippi, Oklahoma, and Texas contributed to that trend.

The 1,300 insolvent cotton farms will need 2–3 years to substantially improve their financial condition. During that time, the debts of many of those farmers will probably be restructured, foreclosed, or forgiven in part. Continued land-value stability will be essential for restoring fiscal health in the near future to nearly 600 stressed cotton farms with debt/asset ratios of 70–100 percent.

Classifying farms by debt service ability indicates the large financial differences among cotton producers (table 4). The 5,700 financially strong (nonstressed) producers fully or partially servicing their debts had $541,028 average net worth, or more than $3 billion total. Another 1,200 financially strong producers had $410 million total net worth

Table 3—Financially strong and stressed specialized cotton operations, January 1, 1987

Debt service category	Debt/asset ratio: No debt (0 percent)	Low debt (0-40 percent)	High debt (40-70 percent)	Very high debt (70-100 percent)	Insolvent (more than 100 percent)	All
Fully able to service debt	Financial strength: 6,914 farms (74 percent of all farms) $1,142 million debt (55 percent of all farm debt)					5,286 farms $1,158 million debt
Partly able to service debt				Financial stress: 2,371 farms (26 percent of all farms) $923 million debt (45 percent of all farm debt)		1,482 farms $426 million debt
Not able to service debt						2,517 farms $481 million debt
All	1,223 0	3,428 $453	2,282 $649	1,018 $406	1,334 $556	9,285 farms $2,065 million debt

Source: 1986 Farm Costs and Returns Survey.

Table 4—Comparison of specialized cotton farms by debt service ability and stress, 1986

Item	Financially strong		Stressed	
	Total	Per farm	Total	Per farm
	Million dollars	1,000 dollars	Million dollars	1,000 dollars
Fully or partly able to meet debt obligations:				
Net worth	3,083	541	-180	-169
Real estate interest	67	12	10	10
Nonreal estate interest	54	9	28	26
Debt--				
Total	1,074	188	510	477
Farmers Home Administration	172	30	114	107
Federal land bank and production credit associations 1/	480	84	121	113
Not able to meet any debt obligations from earnings:				
Net worth	410	337	130	100
Real estate interest	7	6	19	15
Nonreal estate interest	10	8	20	15
Debt--				
Total	66	56	413	318
Farmers Home Administration	17	14	58	44
Federal land bank and production credit associations 1/	17	14	135	103

1/ The Federal land bank and production credit associations are parts of the Farm Credit System.
Source: 1986 Farm Costs and Returns Survey.

compared with $66 million total debt, but they were unable to service debt from farm earnings in 1986.

In contrast, 1,070 stressed farms had -$180 million total net worth and were able to fully or partially service their debt. Another 1,300 farms had a substantial total net worth of $130 million, but they could not service their debt from farm earnings.

The stressed specialized cotton farmers who made some or all of their principal and interest payments in 1986 are the most problematical from the perspective of lenders, especially the Farmers Home Administration (FmHA) and the Farm Credit System. This stressed group had extremely high average debt of almost $500,000, unusually high FmHA debt averaging $107,000, and average net worth of -$168,600.

Lender decisions were much less difficult for the strong producers who were unable to service debt from earnings in 1986. They had a debt/asset ratio of only 15 percent and total interest of $13,500 on average debt of less than $56,000. The very strong loan collateral position of this group currently prevents loan losses and continues to make them good credit risks despite low cash-flows in 1986.

Socioeconomic differences between financially stressed and nonstressed cotton farms are fewer than in most other major enterprises (table 5). Farmers 40 years old or younger are almost twice as likely to be financially stressed as those more than 40 years old. The financially strong farmers tend to be older, which is consistent with their substantially higher assets, averaging over $650,000.

The 2,370 stressed cotton farms have an average net worth of -$21,239 and average assets of $368,058 (table 5). The stressed group paid over 50 percent more in interest expenses than the strong farms. Heavy reliance on FmHA financing, viewed as the lender of last

Table 5—Characteristics of nonstressed and stressed operators of specialized cotton farms, 1986

Item	Nonstressed	Stressed
	Percent	
Operator's characteristics:		
Full time	78	81
Sole proprietor	77	73
Age less than 40	28	50
	Number	
Dependents	3.1	3.2
	Dollars	
Income, sales, and finance:		
Off-farm income	17,060	7,820
Direct Government payments	53,157	56,795
Sales	177,081	178,857
Farm cash-flow	69,836	-778
Debt	165,116	389,297
Net worth	505,165	-21,239
Interest	20,008	34,071
	Percent	
Financial ratios:		
Interest to sales	11	19
Capital investment to value of production	6	9
Cash rent paid to value of production	7	10
Real estate share of assets	63	51
Farmers Home Administration share of debt	17	19

Source: 1986 Farm Costs and Returns Survey.

resort, is consistent with the weakened finances of the stressed group. The FmHA debt of these 2,370 farms averaged $72,556 compared with $27,268 for the 6,900 financially strong cotton producers.

Other differences among cotton farms include:

- Average sales of stressed farms were very close to sales of nonstressed farms, but the stressed farms averaged more than double the debts and $70,000 less net cash-flow from farming than financially strong farms in 1986.

- Average net worth of stressed farms was more than $500,000 less than for nonstressed farms as of January 1, 1987.

In summary, financial stress seriously affected the business performance of 2,370 specialized cotton farms in 1986. Cotton farms tend to be much larger, and the difference in net worth between stressed and financially strong cotton farms is much greater than for specialized corn, wheat, or dairy farms.

REGIONAL COMPARISONS OF COTTON FARMS

Cotton is produced in 17 States. Nine of these States make up the three major cotton regions: the Delta, the Southern Plains, and the West. These three regions accounted for more than 90 percent of total cotton production in the United States in 1986. Most of the other cotton-producing States located outside of the major cotton regions are in the Southeast. Alabama, with $77 million in cash receipts from cotton in 1986, and Georgia, with $58 million in cash receipts from cotton, were among the top 10 cotton-producing States. Table 6 summarizes key financial indicators about specialized cotton farms by region.

Table 6--Financial indicators of specialized cotton farms by region, 1986

Item	Delta	Southern Plains	West	All 1/
		Dollars (per farm averages)		
Gross revenues	252,007	194,245	681,827	271,005
Government payments	50,770	44,335	113,337	54,086
Cotton production	147,336	100,675	414,145	154,187
Other crop production	46,608	30,888	131,212	48,367
Capital expenditures	12,945	13,005	16,344	14,212
Debt	181,007	177,791	611,707	222,354
Interest	21,763	15,081	66,695	23,548
Net returns	43,532	14,682	28,538	29,791
Equity	253,860	409,210	786,107	370,763
Assets	434,868	587,001	1,397,815	593,117
Off-farm income	15,772	15,025	13,009	14,701
		Percent		
Returns margin	17.3	7.6	4.2	11.0
Returns/assets ratio	15.0	5.1	6.8	9.0
Farms with negative net returns	24	39	36	31
Cost/returns ratio 2/	80	89	103	89
Debt/asset ratio	42	30	44	37
Interest/sales ratio	16	15	9	23
Cotton's share of gross revenue	58	52	61	57
Stressed farms	20-22	33-37	24-32	26

1/ Includes specialized cotton farms not located in the three major cotton regions.
2/ The average of all costs (plus capital expenditures and an estimate of the value of unpaid labor) as a percentage of the value of production plus direct Government payments.
Source: 1986 Farm Costs and Returns Survey.

Delta

The Delta--Mississippi, Louisiana, Arkansas, Tennessee, and Missouri--produced nearly 30 percent of all U.S. cotton in 1986. Mississippi leads the region in production and is the third largest producing State. Furthermore, cotton dominates the agricultural economy within the State. Cotton is the most important commodity for Mississippi, accounting for more than 40 percent of crop cash receipts and 18 percent of total cash receipts. Almost 4,300 farms in the region were classified as specialized cotton farms in 1986. About 4,350 other farms produced some cotton in 1986. More than 30 percent of these had most of their production in cotton but had less than $40,000 in total sales. About 40 percent of specialized cotton farms in the Delta were small, 40 percent were midsized, and another 20 percent were in the largest category of $250,000 or more in total production.

Specialized cotton farms in the Delta did relatively well in 1986 compared with those in the Southern Plains and the West. Delta cotton farms had the lowest average asset values but earned the highest net returns of the three major cotton regions.

The following facts pertain to the specialized cotton farms in the Delta region:

- Specialized cotton farms produced 85 percent of the cotton in the region and operated 82 percent of the acres planted to cotton.
- Specialized cotton farms in this region produced 1.31 bales of cotton per planted acre.
- Almost 99 percent of the specialized cotton farms received direct Government payments. These payments accounted for over 43 percent of all payments to specialized cotton farms.
- The Delta was home to 46 percent of all specialized cotton farms in the United States, but only 36 percent of all specialized cotton farms with negative net returns were in the Delta.
- The specialized farms had the lowest cost/returns ratio of the major cotton regions. They had the lowest cost ratios for several individual inputs: irrigation, labor, marketing, and taxes and general overhead.
- Specialized cotton farms rented almost 80 percent of the acres they operated, higher than in any other region.
- This region had the lowest average equity and assets, but the Southern Plains region had a slightly lower debt level.
- Fewer than 25 percent of Delta cotton producers face the prospect of potential loan losses in the remainder of the 1980's, slightly less than the U.S. average.

Southern Plains

The two Southern Plains States, Texas and Oklahoma, produced 28 percent of the U.S. cotton crop in 1986, but Texas' production is by far the larger of the two. Texas is second to, and only slightly behind, California. Over 11,700 farms produced cotton in the Southern Plains, of which 3,650 were classified as specialized cotton farms. The others either specialized in another commodity (52 percent) or cotton was their major commodity but they were not of a commercial size (48 percent). Fifty percent of the specialized cotton farms in this region were small with total production between $40,000 and $100,000.

The returns of specialized cotton farms in this region were very low in 1986, because poor weather in the area lowered average yields. Weather has been a serious problem for cotton producers in the Southern Plains for much of this decade. Despite longer term problems, the balance sheet of specialized Southern Plains farms compares favorably with other regions. That is, their debt/asset ratio is the lowest of the major cotton regions. However, specialized cotton farms in this region are among the most stressed of the major cotton regions, largely because of their very low net returns. Weather was favorable for the 1987 cotton crop in the Southern Plains, and yields were up from 1986.

The following facts pertain to the specialized cotton farms in the Southern Plains:

- Specialized cotton farms produced 71 percent of the region's cotton and planted 56 percent of the region's cotton acreage.
- The 1986 yield of specialized cotton farms in this region was only 0.68 bale per planted acre. The yield per harvested acre was somewhat higher at 0.74 bale, but still lower than the other cotton regions.
- The average specialized cotton farm operated more total acres than any cotton region, but fewer acres were planted to cotton than in the West.
- The Southern Plains had the lowest returns/assets ratio, 5.1 percent, and the lowest average net returns, $14,682, of the three major regions.
- The region had the highest share of farms with negative net returns, 39 percent, and accounted for almost 50 percent of all specialized cotton farms with negative net returns.
- The average direct Government payment, $44,335, was the lowest of any region.
- Livestock production averaged $6,476 per farm, the highest of all cotton regions, and total crop sales averaged more than $130,000, the lowest of all regions. This greater participation in livestock enterprises is evident in their cost structure as well: the region had the lowest cost ratios for crop inputs and the highest cost ratios for livestock inputs of all the regions.
- Small specialized cotton farms had the highest cost structure of the region, except for their lower chemical and leasing cost ratios.
- Specialized cotton farms in this region had relatively low average debt/asset ratio, 30 percent compared with 37 percent across all regions.

West

The Western cotton region is composed of California and Arizona. California produces 26 percent of the U.S. total, more than any other State. Arizona produces considerably less cotton than California, but it is still the fourth largest producer. Cotton is much more important to the agricultural economy of Arizona than it is to California, a major producer of many commodities.

Cash receipts for cotton made up 16 percent of the total cash receipts for Arizona in 1986 compared with 5 percent of California's total. Just over 2,000 farms produced cotton in the West in 1986. Over 900 of these were classified as specialized cotton farms.

The other 1,100 were either not of a commercial size (5 percent) or, mostly, specialized in other commodities (95 percent). Unlike the other major cotton regions, most of the specialized cotton farms in the West were large farms (60 percent).

We calculated returns based on the value of cotton production at the prices and loan deficiency rates for Upland cotton, because our data do not permit us to separate Upland cotton from extra long staple (ELS) cotton. Upland cotton accounted for more than 98 percent of the 1986 U.S. cotton production. ELS cotton was produced in only three States in 1986, including Arizona where it accounted for 18 percent of total cotton production. The higher market price for ELS cotton may mean that actual returns for cotton producers in the West may be higher than reported here.

Specialized cotton farms in the West maintained a low interest/sales ratio although their average debts exceeded $600,000 at the end of 1986, largely because of their significantly greater yields and large average farm size. Specialized cotton farms in this region also received more direct Government payments per farm than any other region, averaging $113,337. There was no limit on the loan deficiency component of these payments in 1986. Thus, the many large cotton farms in this region probably received the largest direct Government payments ever. The specialized cotton farms in the West had the lowest returns margin of the major cotton regions, despite high Government payments. This situation is consistent with their significantly higher cost structure.

The following facts pertain to specialized cotton farms in the West:

- Specialized cotton farms produced 65 percent of the region's cotton and operated 63 percent of the region's acres planted to cotton.

- Specialized cotton farms had a very high average yield of 2.3 bales per planted acre, reflecting the region's extensive use of irrigation.

- Almost 82 percent of specialized cotton farms reported some direct Government payments, compared with at least 98 percent in the other two cotton regions. The average payment for all specialized cotton farms, $113,337, was more than double the average amount of the other cotton regions.

- Specialized cotton farms produced cotton valued at $414,145 per farm, almost three times the average values in the other regions.

- The cost/returns ratio of specialized cotton farms was the highest of all regions, regardless of whether one included direct Government payments with returns or not.

- Specialized cotton farms rented a smaller percentage of the acres they operated than any other region. Almost all of the acres rented were rented on a cash basis.

- The average interest expense was $66,695 in 1986 for these producers. Their average debt of more than $600,000 was about three times higher than the average for all U.S. cotton operations. However, the West's higher than average sales levels kept the average interest/sales ratio at less than half the U.S. average.

- The average equity cushion of more than $750,000 was more than double the U.S. average for specialized cotton farms. The strong equity base and the higher than average sales levels provide underlying financial stability to cotton producers in the West.

FOR ADDITIONAL INFORMATION AND COPIES. . .

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The financial performance of farms varies significantly by type of commodity production, and many of the important farm commodity policy programs are relevant only to farms of a commercial size. USDA's Economic Research Service is publishing a series of bulletins aimed at informing those interested in the financial performance of commercial farms which specialize in particular commodities. The following titles have been previously published in this series:

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